Crysler, Ruby

From: Wight, Brian <brian.wight@aecom.com>
Sent: Monday, September 19, 2016 10:15 AM
To: Jacqueline Grunau (jgrunau@kdheks.gov)
Cc: Crysler, Ruby; Mark D. Wichman (mark.d.wichman@usace.army.mil); Sansom, Andrea NWO; KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil); BLAIR, SHELDON M CTR USAF AMC 22 CES/CEIE; Krause, Michael; Bergantzel, Vanessa; Mowan, Ryan; Mike L. Schofield (mlschofield@gsi-net.com)
Subject: McConnell AFB PBR: RTC: SS544 & OT547
Attachments: OT547_DFT_ISCO ICR_RTCs (KDHE).docx; McConnell SWMU 207 Report_Draft_RTCs_KDHE_09082016.docx

Jacqueline,

Our responses to your comments on the document listed below are attached for your review and approval. If possible, please provide your approval on or before 26 September 2016. If this is not possible, please let us know when your approval may be received.

- SS544 (SWMU 207) Draft RFI
- OT547 – Building 692 Former Equipment Washout Pit Draft 2015 ISCO ICR

Thanks

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TECHNICAL REVIEW COMMENTS
McConnell AFB PBR
W9128F-13-C-022
OT547
Draft OT547 2015 ISCO Injection Completion Report
McConnell Air Force Base, Wichita, Kansas
Date of Comments: 22 August 2016

Name: Jacqueline Grunau	**Phone Number: (785) 296-1682**
Organization: KDHE	**E-mail Address: jgrunau@kdheks.gov**

General Comments:

None

Specific Comments:

Item	Section	Page	Para	Comment	A, D, E, or NFD	Response
1.	Section 2.2; Figure 2-1	Page 2-1		The first sentence of this paragraph indicates one monitoring well, B692-MW17 was abandoned and replaced as part of the 2015 ISCO Injection effort. Figure 2-1 is referenced as showing the location of the replacement monitoring well, B692-MW17R; however, Figure 2-1 shows the location of 14 replacement monitoring wells. Please explain why only one monitoring well abandonment and replacement is included in this document. If the additional wells in Figure 2-1 are a part of another site action, please consider displaying these wells in another color. Revise as necessary.	A	Only monitoring well B692-MW17 was abandoned and replaced with monitoring well B692-MW17R as part of the ISCO injection activities at OT547. The other monitoring wells shown in blue as "replacement" monitoring wells in Figure 2-1 will be changed to black (labeled as "Existing Monitoring Well") since those monitoring wells were replaced as part of the ISCR injection activities and are documented in the ISCR Injection Completion Report.
2.	Section 2.5.1	Page 2-3		This section discusses soil waste. KDHE has not to date received any letter discussing characterization and disposal of soil waste at any sites undergoing ISCO or ISCR injections at McConnell. Please comment on this, and give some indication when letters of this type will be forthcoming.	A	As discussed during recent bi-weekly project status meetings with project stakeholders, URS is in the process of preparing letters documenting recent disposal of soil IDW from McConnell AFB.
	END					

A= agree D=disagree E = explanation NFD=needs further discussion

8 September 2016

TECHNICAL REVIEW COMMENTS
McConnell AFB PBR
Contract Number W9128F-13-C-022
Draft SWMU 207 (SS544) RCRA Facility Investigation Report
McConnell Air Force Base, Wichita, Kansas
August 2016

Name:	**Jacqueline Grunau, Environmental Scientist Remedial Section** **Bureau of Environmental Remediation**	**Phone Number: 785-296-1682**
Organization:	**Kansas Department of Health and Environment**	**E-mail Address: jgrunau@kdheks.gov**

General Comments:

1. See Below

Specific Comments:

Item	Section	Page	Para	Comment	A, D, E, or NFD	Response	A or D
1.	2.2.1	2-2	1	**Section 2.2.1, Page 2-2:** The first sentence of this section states that boring locations were selected in areas where the horizontal and vertical extents of CVOCs in groundwater were not delineated to respective MCLs. This document discusses 3 "soil boring" locations (SWMU207-SB1A, -SB2A, and -SB3A), as well as 26 monitoring wells installation locations. However, out of 29 total soil boring locations, this document states there are only 20 soil borings that were evaluated for possible soil contamination. Please specify which soil boring locations were evaluated for possible soil contamination, and clarify why soil was not evaluated for possible contamination at the remaining 9 locations.	E	The discrepancy is a result of several wells being co-located in order to monitor multiple vertical intervals at the same location. There are 20 different well locations, several of which include 2 or 3 discrete wells installed immediately adjacent to one another (less than 4 feet spacing horizontally), resulting in the installation a total of 29 individual monitoring wells and/or borings. Given the large scale of the site investigation area, these were considered to be 20 unique screening locations. Text will be added to **Section 3.3** to improve clarity.	
2.	2.2.2	2-4	2	**Section 2.2.2, Page 2-4:** The second paragraph on this page discusses collecting water level measurements. Please consider including the field documentation associated with the collection of this information (i.e. field pages, field forms).	A	Field Notes are being included in the final report in an additional **Appendix J**.	

A= agree D=disagree E = explanation NFD=needs further discussion

Item	Section	Page	Para	Comment	A, D, E, or NFD	Response	A or D
3.	2.2.3	2-4	2	**Section 2.2.3, Page 2-4:** The second paragraph of this section states that monitoring wells were "pumped at a constant rate." This is not accurate. Based on the Groundwater Sampling Field Sheets in Appendix C, there were many wells at which groundwater was purged at variable rates (see Well No. SWMU207-MW30), including purge rates significantly higher than the 0.100 L/min to 0.200 L/min guideline described in SOP No. 15 - Monitoring Well Groundwater Sampling in the Field Sampling Plan (Revision 4). There were also several wells that experienced draw down greater than the 2.0 foot maximum described in SOP No. 15 (see Well No. SWMU207-MW37). Please comment on derivations from the SOP, and revise Section 2.2.3 as necessary.	A	Variations in pumping rates were generally caused by a series of issues with the pump controller boxes used during the field campaign. Despite replacing controller boxes several times during the sampling event, we experienced issues with pumping rates varying without the settings being altered by the sampler. When the controller boxes were set at a very low setting (i.e. 0.100 L/min), unexpected variations would cause the flow to stop entirely, interrupting the sampling process. As a measure to control this issue, pumping was maintained marginally above the 0.100 to 0.200 L/min range stated in the sampling SOP, generally in the 0.200 to 0.400 min/L range but not exceeding 0.500 L/min. It should be noted that parameter stabilization was achieved prior to sampling, indicating that proper connection was made with the water bearing unit. A comment will be added to **Section 2.2.3 to** explain this deviation from the SOP. As stated in the sampling SOP "For monitoring wells screened below the water table, a greater drawdown during purging will be acceptable as long as the water level does not fall to below the top of the screen." The limited subset of wells in which more than 2.0 feet of drawdown was observed were configured in a way in which the water level did not extend below the top of the screened interval during sampling.	
4.				**Section 2.2.5, Page 2-6:** It is unclear if the soil IDW generated during this RFI was characterized prior to disposal. Please provide documentation of soil characterization activities as are outlined in SOP No. 5 in the Field Sampling Plan (Revision 4). This section indicates purged groundwater was contained in 500-barrel steel tanks, and transported to Plum Thicket Landfill. In general at McConnell, aqueous IDW is disposed of onsite. If purged groundwater was disposed of offsite, please submit documentation of aqueous waste characterization.	A	Documentation of soil characterization is provided in **Appendix G**. Due to the high volume and silty nature of development water, this waste was disposed of offsite at Plum Thicket Landfill instead of being treated at the onsite treatment system. Purge water documentation will be added to **Appendix G** in the final version of the RFI.	

Item	Section	Page	Para	Comment	A, D, E, or NFD	Response	A or D
5.	2.3	2-7		**Section 2.3, Page 2-7:** The second to last paragraph on this page states that evaluation of historical data from 2007 through the 2014 sampling event indicates concentrations of CVOCs are stable, and that the September 2014 data is representative of site conditions during the RFI. This is the given rationale for not including the Boeing contractor's September 2014 data to support identification of CVOC plumes and their sources in and around SWMU 207. It is unclear, however, what "stable" and "representative of site conditions" might mean given there is no data to back these comments up. Please update this section to clarify these items. Other derivations from the Work Plan not listed in this section include: ▪ Analysis for Total Organic Carbon in soil. – Work Plan - Monitoring wells: SWMU207-MW44, -46, -51 – RFI Report - Monitoring wells: SWMU207-MW44, -46 ▪ Geochemical Parameters in groundwater. – Work Plan - Monitoring Wells: MW-181, -218,-219, SWMU207-MW44, -46,-51 – RFI Report - Monitoring Wells: MW-181, -218, -219, SWMU207-MW44, -51, -54, -55D ▪ Hexavalent Chrome in groundwater. – Work Plan - Monitoring Wells: MW-181, SWMU207-MW44, -51 – RFI Report - Monitoring Wells: MW-181, SWMU207-MW51, -54 ▪ Dissolved Gasses and qPCR – Work Plan - Monitoring Wells: MW-180, -181, SWMU207-MW46 – RFI Report - Monitoring Wells: MW-180, -181, SWMU207-MW44S ▪ Compound Specific Stable Isotope Analysis (CSIA) – Work Plan - Monitoring Wells: MW-180, -181,-217,-218 – RFI Report - Monitoring Wells: MW-180, -181, -217, -218, BH-02-01, BHW-037 Please discuss why these derivations from the Work Plan took place, and why monitoring wells were added or subtracted from the above analytical lists, as they were described in the Work Plan.	A	Text will be added to **Section 2.3** supporting the claim that concentrations on the former Boeing property are stable. An additional line of evidence which supported exclusion of the 19 monitoring wells on the former Boeing property from the 2015 sampling utilizing analysis of Compound Specific Isotope Analysis (CSIA) results will be included in **Section 2.3**. The following deviations will also be addressed in **Section 2.3**: ▪ Analysis for Total Organic Carbon in soil. – Work Plan - Monitoring wells: SWMU207-MW44, -46, -51 – RFI Report - Monitoring wells: SWMU207-MW44, -46 (2 depths) The identification of upper and lower transmissive zones in the study area prompted a deviation from the Work Plan when evaluating TOC in soil. In lieu of 3 samples laterally separated, it was decided in the field to take two of the samples at the same location, in order to capture variability in organic carbon between upper and lower zones at the same location. ▪ Geochemical Parameters in groundwater. – Work Plan - Monitoring Wells: MW-181, -218,-219, SWMU207-MW44, -46,-51 – RFI Report - Monitoring Wells: MW-181, -218, -219, SWMU207-MW44S, -54, -55D SWMU207-55D and -54 were sampled in order to have analysis of geochemical parameters coincident with samples with hexavalent chromium results. ▪ Hexavalent Chrome in groundwater. – Work Plan - Monitoring Wells: MW-181, SWMU207-MW51, -44 – RFI Report - Monitoring Wells: MW-181, SWMU207-MW51, -54, -55D A sample was collected from MW-44S for hexavalent chromium analysis, but was received beyond the required 24 hour hold time, as documented by Lab Report J68637-1 in **Appendix I**. In lieu of resampling MW-44S, hexavalent chromium analysis was performed at well MW-54, and, subsequently an additional sample was added at well location MW-55D. ▪ Dissolved Gasses and qPCR – Work Plan - Monitoring Wells: MW-180, -181, SWMU207-MW46 – RFI Report - Monitoring Wells: MW-180, -181, SWMU207-MW44S Unfortunately sampling of MW-46S took place before sample containers for this specific analysis were available. The plan in the field was to then take the sample from the deeper interval in order to comply with the Work Plan, however when MW-46D was sampled, the well produced insufficient water to fill all sample containers. As a result, the sample was taken from nearby MW-44S. ▪ Compound Specific Stable Isotope Analysis (CSIA) – Work Plan - Monitoring Wells: MW-180, -181,-217,-218 – RFI Report - Monitoring Wells: MW-180, -181, -217, -218, BH-02-01, BHW-037 Additional CSIA samples were added in order to characterize the isotopic signature related to the Ramp 500 source area.	

A= agree D=disagree E = explanation NFD=needs further discussion

Item	Section	Page	Para	Comment	A, D, E, or NFD	Response	A or D
6.	3.2	3-2		**Section 3.2, Page 3-2:** Please consider including field documentation for the June 17, 2015 potentiometric elevations survey. (See Comment #2)	A	Field Notes are being included in the final report in an additional **Appendix J**.	
7.	3.3	3-3		**Section 3.3, Page 3-3; Appendix A:** Section 3.3 states that no indication of chemical impact was observed during the drilling of the 20 boring locations. However, there are PID detections at some of the boring locations (see SWMU207-MW49S) that may have warranted collection of a soil sample, especially given that there were PID detections in conjunction with a soil described as "black moist to wet material." Please clarify why no soil samples were taken in cases where PID levels were found to be above background. Also, please clarify why in the case of clustered wells, and in the case of the three additional soil borings (SWMU207-SB1A, -SB2A, and -SB3A), PID readings are identical. It is not appropriate to duplicate PID readings on boring logs, where no PID readings were taken during the drilling of that boring.	E	Field notes (to be included as **Appendix J**) indicate that standard calibration was performed on the PID prior to drilling the boring at SWMU207-MW49S, and that a background reading (reading from a dry, empty sample container) was recorded as 0.6 ppm. According to the boring log, the black soil present at 17.4 feet had "no odor" and there is no indication the material was anthropogenic in nature, especially given the wide range of colors observed in borings across this particular site (black shale, reddish brown silty clay light brown sand, olive green and red clays, orange/gray mottling, black manganese staining, tan sands, all of which are described in **Appendix A**). PID readings on the boring log of SWMU207-MW49S were very uniform in nature, with readings varying between 0.5 and 3 ppm, marginally above background and consistent across the full vertical interval of 0 to 65 feet below ground surface. At the time of drilling, the field geologist interpreted the readings as background variability, most likely associated with moisture breakthrough of the moisture filter. The lack of correlation between the pattern of low readings and any physical structures such as the presence of saturated intervals, soil colors, or changes in grain size support that these readings are not indicative of any actual soil contamination. In the case of the three soil borings (SWMU207-SB1A, -SB2A, and -SB3A) PID readings were inadvertently duplicated during the boring log drafting process. Field logs will be used to correct the drafted logs in **Appendix A** and be included in the final RFI. At the cluster well locations, monitoring wells were placed directly adjacent to one another, at a spacing of 4 feet or less. PID records were duplicated between adjacent boreholes. The boring logs in **Appendix A** will be annotated to clarify which readings were directly measured and which readings were duplicated from the adjacent boring.	
8.	Tables			**Table 3-5:** There are no notes included on this table. Please revise as necessary.	A	**Table 3-5** will be revised to include notes.	
9.	Figures			**Figures (General Comment):** Most of the figures included in this document are indicated as being "Preliminary." It is unclear why the figures in this document would be preliminary. Please revise as necessary.	A	All Preliminary and Draft stamps will be removed in the final version of the RFI.	